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ABSTRACT

Presenting employment projections for the total labor market through 1985, this document accompanies a series of forty-one reprints (CE 017 757-797) from the Occupational Outlook Handbook which provide current information and employment projections for individual occupations and industries through 1985. The employment projections and related discussions are divided into the following categories: industrial profile, occupational profile, job openings, and the relationship between job prospects and education. Assumptions and methods used in preparing employment projections are presented; and sources for additional information about jobs and careers are listed, including state employment security agencies, information for special groups, information on finding a job, and labor market information. (BM)

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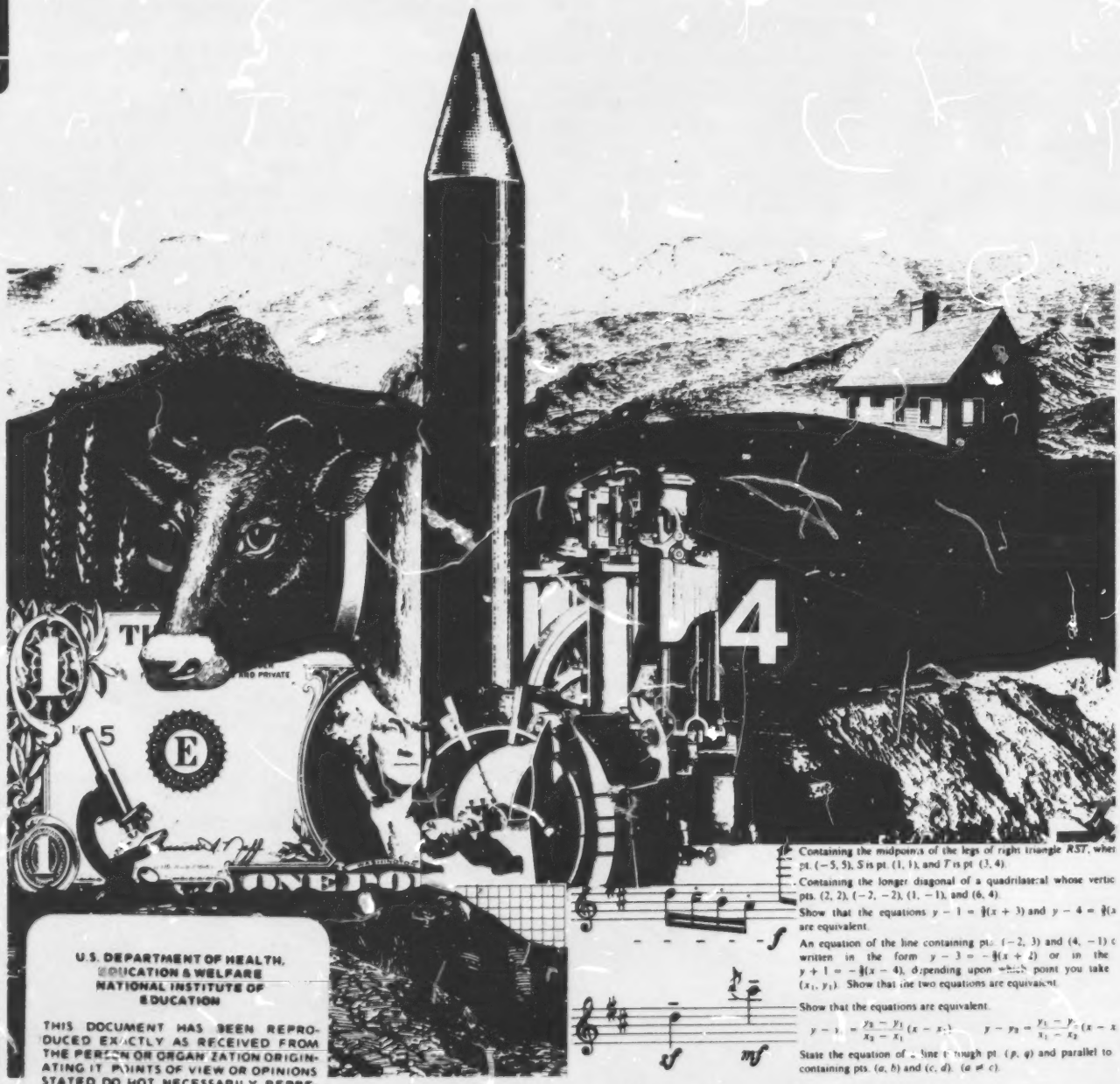
1978-79 Edition.

U.S. Department of Labor
Bureau of Labor Statistics
1978

Bulletin 1955-1



Containing the midpoints of the legs of right triangle *RST*, wher
pt. (−5, 5), *S* is pt. (1, 1), and *T* is pt. (3, 4).

Containing the longer diagonal of a quadrilateral whose vertic
pts. (2, 2), (−2, −2), (1, −1), and (6, 4).

Show that the equations $y - 1 = \frac{1}{2}(x + 3)$ and $y - 4 = \frac{1}{2}(x$
are equivalent.

An equation of the line containing pts. (−2, 3) and (4, −1) c
written in the form $y - 3 = -\frac{1}{2}(x + 2)$ or in the
$y + 1 = -\frac{1}{2}(x - 4)$, depending upon which point you take
(x_1, y_1). Show that the two equations are equivalent.

Show that the equations are equivalent.

$$y - y_1 = \frac{y_2 - y_1}{x_2 - x_1}(x - x_1) \qquad y - y_2 = \frac{y_1 - y_2}{x_1 - x_2}(x - x$$

State the equation of a line through pt. (p, q) and parallel to
containing pts. (a, b) and (c, d). $(a \neq c)$.

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CE 017 756

TOMORROW'S JOBS

Early in human history, people entered occupations by simply following their parents into one of the relatively few occupations that existed. Boys became farmers, shepherds, priests, artisans, or traders. Girls generally became housewives, helping their husbands in their work, but having no paid occupations. Not until the Industrial Revolution did the number of possible choices begin to expand.

But as the choices have increased, so has the difficulty of making a decision. Today there are thousands of occupations—the newest *Dictionary of Occupational Titles* lists 20,000 separate titles—and a variety of education and training programs from which to choose. Many questions must be considered: What fields match one's interests and abilities? What types of education and training are required to enter particular jobs? What fields are expected to offer good prospects for employment? How do earnings compare among occupations requiring similar training? What types of employers provide which kinds of jobs? Does a particular job offer steady, year-round employment or is it affected by minor swings in the economy?

The answers to these questions change as our economy changes. Current information therefore is a necessity. While the individual occupation and industry statements in the *Handbook* answer most of the questions raised here, two areas of particular concern, to educators and vocational planners as well as to individuals who are choosing their careers, require a broader perspective. One concerns employment projections, the other, the relationship between job prospects and education. This section focuses on these two aspects of choosing a career.

Employment Projections in a Changing Economy

The demand for workers in any occupation depends ultimately on the tastes and desires of consumers. If a product or service is unwanted, whether by private or public purchasers, no workers will be needed to produce or provide it. Barbers would become unnecessary if people decided to cut their own hair, as would astronauts if the Federal Government abandoned its space program.

Closely interwoven with the demand for products or services is technological innovation. In the 20th century, technology has both created and eliminated hundreds of thousands of jobs. The telephone, for example, gave birth to an entire industry at about the same time that the automobile put stable owners and carriage manufacturers out of business. Changes in the way businesses are organized and managed have had similar effects; the rise of supermarket chains has drastically reduced the number of self-employed grocers.

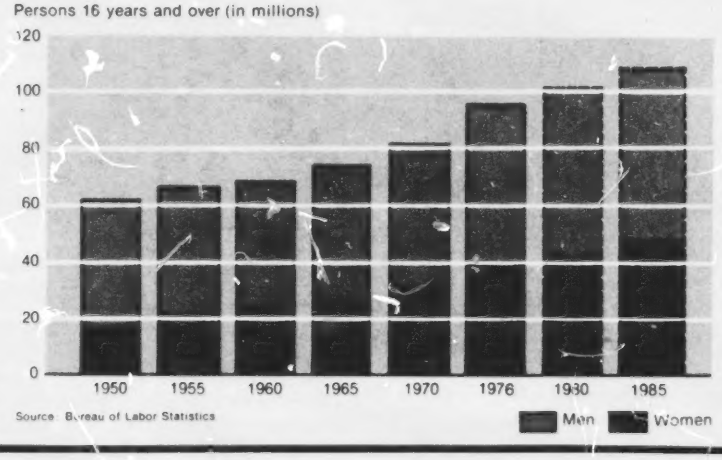
Fortunately, most of the factors that alter the demand for workers in various occupations do not change overnight. Shifts in the state of the economy, the introduction of new technology, and the development of new organization and management techniques generally occur in an orderly, fairly predictable fashion. Although no one can forecast the future with certainty, it is possible to make industry and occupation employment projections that are useful to educators, vocational planners, and individuals who are planning their careers. The economic and statistical analysis used by the Bureau of Labor Statistics to develop its projections is described in some detail in a separate introductory section.

In 1985, approximately 104.3 million persons will be in the civilian labor force. This is an 19-percent increase over the 1976 level of 87.5 million. As shown in chart 1, the size of the civilian labor force increased sharply after 1960, largely due to the increase in the number of women entering the labor market. The labor force participation rate for women has continued to rise even while the rate for men has declined. (See chart 2.)

Industrial Profile

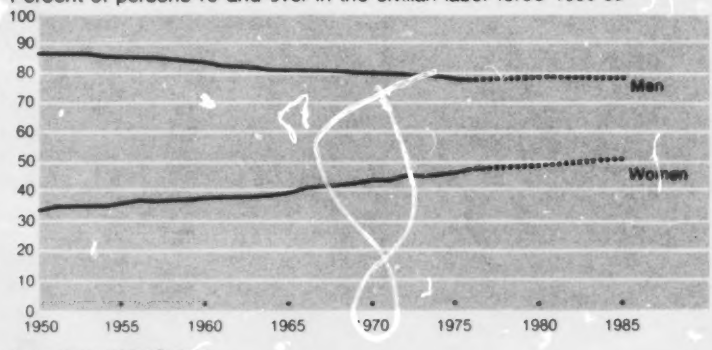
Economists customarily divide our economy into nine industry categories under two broad groups—goods producing and service producing. Most of the Nation's workers currently are employed in industries that

Civilian labor force growth, 1950-76 and projected 1980 and 1985 1



Source: Bureau of Labor Statistics

The percent of women who are in the labor force has been increasing, while the percent of men has been declining 2



Source: Bureau of Labor Statistics

provide services, such as education, health care, trade, repair and maintenance, government, transportation, banking, and insurance. The production of goods through farming, construction, mining, and manufacturing requires only about one-third of the country's work force. (See chart 3.)

As shown in chart 4, employment in the goods-producing industries has remained relatively constant since World War II, whereas the service-producing industries have expanded rapidly. Among the factors contributing to this rapid growth were the migration from rural to urban areas and the accompanying need for more local government services, and rising incomes and living standards that resulted in a demand for improved health and education services. These factors are expected to continue to cause the demand for services to grow.

Service-Producing Industries. Employment in the service-producing industries is expected to increase from 56.1 million workers in 1976 to 71.0 million in 1985, an increase of 26 percent. Of course, growth rates will vary among the industries within this group. (See chart 5.)

Trade, the largest of the service industries, is expected to grow by about 20 percent between 1976 and 1985, from 17.7 million to 21.3 million workers.

Both wholesale and retail trade have increased as population has grown and as rising incomes have enabled people to buy a greater number and variety of goods. Retail trade has grown more rapidly than wholesale trade as the expansion of the suburbs has created a demand for more shopping centers. Although self-service is expected to become more prevalent, employment in retail trade nonetheless will continue to grow faster than in wholesale trade.

Government has been the second fastest growing service industry. Employment in State and local governments doubled between 1960 and 1976. Growth has been greatest in agencies providing education, health, sanitation, welfare, and police and fire protection. Federal Government employment has increased only 20 percent during the same period.

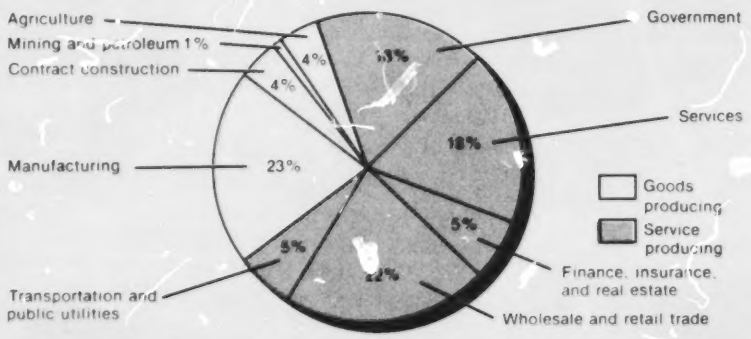
Between 1976 and 1985, employment in government is expected to rise 22 percent, from 14.9 million to 18.3 million workers. This growth rate is less than that expected for services as a whole. Although State and local governments will continue to be the major source of jobs, the budget problems many local governments now face are expected to retard the expansion of some government programs.

Service industries have been the fastest growing group in the service-producing category, nearly doubling in employment between 1960 and 1976. The growing need for health care, maintenance and repair, advertising, and commercial cleaning services has been the primary force behind this growth.

In the future, service industries are expected to continue their rapid growth—employment is projected to increase from 14.6 million workers in 1976 to 20.6 million in 1985. This projected growth rate of 40 percent is nearly twice as rapid as that of the

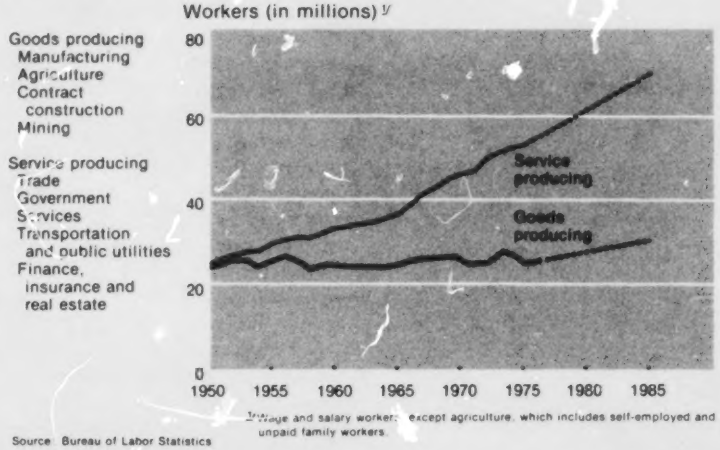
Where people work, 1976 3

Wage and salary workers except agriculture, which includes self-employed and unpaid family workers



Source: Bureau of Labor Statistics

Industries providing services offer more jobs than those providing goods 4



1/ Wage and salary workers except agriculture, which includes self-employed and unpaid family workers.

Source: Bureau of Labor Statistics

service-producing industries as a group. Employment requirements in health care are expected to grow rapidly due to population growth—in particular the growth in the number of elderly persons—and rising incomes that increase people's ability to pay for medical care. Business services, including accounting, data processing, and maintenance, also are expected to grow rapidly.

Transportation and public utility industries experienced a much slower growth rate between 1960 and 1976 than any of the other service-producing industries. This has largely been due to employment declines in the railroad and water transportation industries.

Although employment in the railroad and water transportation industries is expected to continue to decline (but at a slower rate than before), other industries in this group will experience increases. The air transportation industry, which nearly doubled in size between 1960 and 1976, will continue to grow at a moderate pace.

Between 1976 and 1985, employment in transportation and public utilities industries is expected to rise from 4.5 million to 5.2 million workers, an increase of 16 percent.

Finance, insurance, and real estate will grow faster than services as a whole. Employment is expected to increase from 4.3 million to 5.6 million workers between 1976 and 1985, an increase of 30 percent.

Within this group, the two fastest growing industries have been banking and credit agencies. Employment in banking nearly doubled between 1960 and 1976, reflecting a growing population that increasingly pays its bills by check. Employment requirements also grew as banks began to provide more services, particularly the bank credit cards, and remained open longer hours. Population growth also meant an increased demand for the services of finance companies, savings and loan associations, and other credit agencies. These trends are expected to continue through the mid-1980's.

Goods-Producing Industries. Employment in the goods-producing industries—agriculture, mining, construction, and manufacturing—has changed very little since 1960. Significant gains in productivity resulting from automated production, improved machinery, and other technological breakthroughs have permitted large increases in output without additional workers. Between 1976 and 1985, employment in goods-producing industries is expected to increase by about 17 percent, from 26.6 million to 31.1 million workers.

Growth rates will vary from industry to industry within this group. Employment in *agriculture*, which has long been declining, stabilized at about 3.5 million workers between 1970 and 1975, but dropped again to 3.3 million in 1976. Since the 1950's, the trend toward fewer but larger farms and the use of more and better machinery has reduced the need for farmers and farmworkers. So too has the development of improved hybrid crops. Recently, for example, a hybrid tomato was developed that has a harder skin and can be machine harvested.

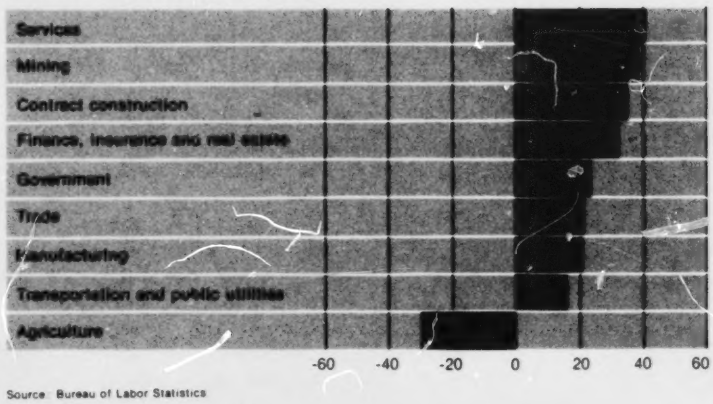
Although employment on farms has declined, rapid mechanization combined with better fertilizers, feeds, pesticides, and hybrids have created large increases in output. The worldwide demand for food is rising rapidly as population increases, but production is expected to continue to rise without reversing the employment decline in agriculture. Between 1976 and 1985, employment is expected to drop about 29 percent, from 3.3 million to 2.3 million workers.

Mining, once declining in employment, increased abruptly between 1970 and 1976, experiencing a 26-percent growth rate during this period and matching the growth rate of the fastest growing industry group, services. Most of this growth was a direct result of our need for additional energy. Employment in the oil and gas extraction industry rose 33 percent between 1970 and 1976, and is expected to rise another 70 percent by 1985. Coal, the most commonly used alternative energy source, has been and will continue to be in great demand.

Employment in mining is expected to grow 39 percent between 1976 and 1985, from 0.8 to 1.1 million workers.

Contract construction, which grew fairly rapidly between 1960 and 1968, stagnated between 1968 and 1976. The earlier growth, which reflected an increasing need for houses, apartment and office buildings, highways, and shopping centers, was dampened by the economic downturn that began in the late 1960's.

Through the mid-1980's employment growth will vary widely by industry 5



Source: Bureau of Labor Statistics

Buildings that had been vacant are now filling up, however, and as our economy recovers, employment in construction is expected to increase, rising by 38 percent between 1976 and 1985, or from 3.6 million to 4.9 million workers.

Manufacturing employment, also adversely affected by the economic conditions of the early 1970's, is expected to grow from 18.9 million to 22.8 million between 1976 and 1985, an increase of 20 percent.

Manufacturing is divided into two broad categories, durable goods manufacturing and nondurable goods manufacturing. Employment in durable goods manufacturing is expected to increase by about 25 percent, from 11.0 million to 13.8 million workers, while employment in nondurable goods manufacturing is expected to increase by only 13 percent, from 7.9 million to 9.0 million workers.

Growth rates will vary among individual industries within each of these categories. In nondurable goods industries, for example, employment in tobacco manufacturing is expected to decline, while a moderate rise in employment is projected for the synthetic fiber industry. Among durable goods manufacturing industries, medical instrument manufacturing is expected to undergo a rapid employment increase; motor vehicle manufacturing will employ about the same number of workers in 1985 as it did in 1976.

Occupational Profile

Customarily, occupations also are divided into several groups. White-collar workers are those in professional and technical, clerical, sales, and managerial jobs. Blue-collar workers are those in craft, operative, and laborer jobs. Service workers and farm workers constitute separate groups. Chart 6 illustrates the occupational profile in 1976.

Growth rates among these groups have differed markedly, as shown in chart 7. Once a small proportion of the total labor force, white-collar workers have steadily increased in importance until they now represent about half of the total. The number of service workers also has risen rapidly, while the blue-collar work force has grown only slowly and the number of farmworkers has declined.

Most of these changes in occupational employment have been due to variations in the growth rates of industries. Every industry group has a unique occupational pattern. (See chart 8.) Construction, for example, employs mostly blue-collar workers, while finance, insurance, and real estate is predominantly a white-collar industry group. Growth in the construction industry would result in an increase in employment of blue-collar workers. The same would be true for growth in mining, manufacturing, or transportation—industries that also employ mostly blue-collar workers. The magnitude of the change would depend on both the rate of growth and the size of the industry.

The following sections describe the changes that are expected to occur among the broad occupational groups between 1976 and 1985. (See also chart 9.)

Professional and technical workers include a wide range of workers, many of them highly trained. Among this group are scientists and engineers, medical practitioners, teachers, entertainers, pilots, and accountants. Employment in this group is expected to grow by about 18 percent between 1976 and 1985, rising from 13.3 million to 15.8 million workers.

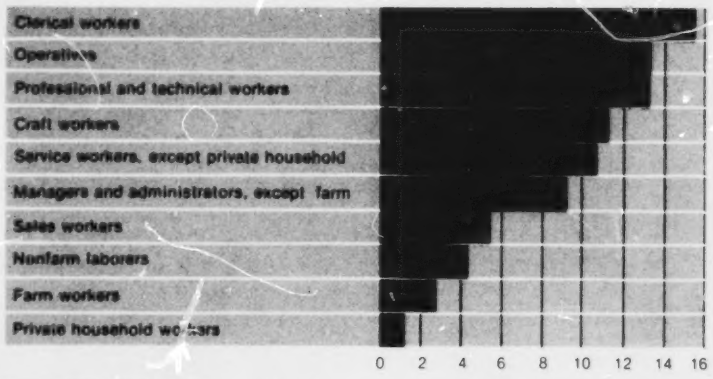
Greater efforts in energy production, transportation, and environmental protection will contribute to a growing demand for scientists, engineers, and technicians. The medical professions can be expected to grow as the health services industry expands. The demand for professional workers to develop and utilize computer resources also is projected to grow rapidly.

Some occupations will offer less favorable job prospects, in many cases because the supply of workers exceeds the available openings. Teachers will continue to face competition, as will artists and entertainers, airline pilots, and oceanographers.

Managers and administrators include workers such as corporate executives, school and health services administrators, department store managers, and self-employed business operators. This group is expected to grow from 9.3 million to 11.3 million workers, an increase of 21 percent. The rapidly expanding service industries are expected to offer more jobs for managers than the slowly growing manufacturing industries.

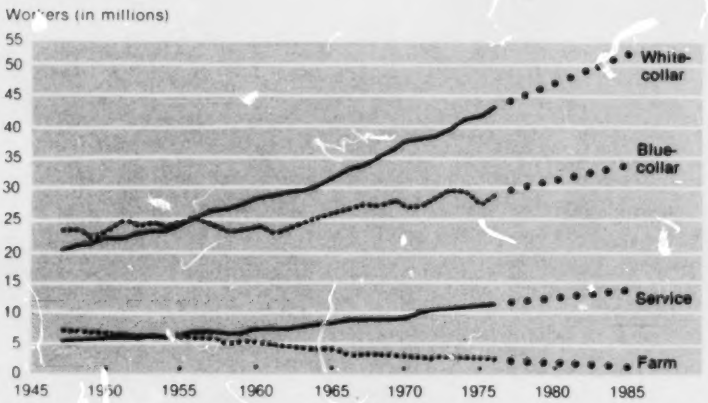
Changes in business size and organization have resulted in differing trends for self-employed and salaried managers. The number of self-employed managers will continue to de-

Employment in major occupational groups 6



Source: Bureau of Labor Statistics

The shift toward white-collar occupations will continue through 1985 7



Source: Bureau of Labor Statistics

Note: 14- and 15-year olds are included prior to 1958 only.

cline as many areas of business are increasingly dominated by large corporations and chain operations. Some kinds of small businesses, such as quick-service grocery and fast-food restaurants, still will provide opportunities for self-employment, however. The demand for salaried managers will continue to grow rapidly as firms increasingly depend on trained management specialists, particularly in highly technical areas of operation.

Clerical workers constitute both the largest and the fastest growing occupational group. Employment in these occupations is expected to grow about 29 percent between 1976 and 1985, rising from 15.6 million to 20.0 million workers.

New developments in computers, office machines, and dictating equipment will greatly affect employment in many occupations within this group. As computers are used more extensively to store information and perform billing, payroll, and other calculations, employment of file clerks and many types of office machine operators will level off or decline. At the same time, however, the need for computer and peripheral equipment operators will increase. Dictation machines, which have sharply reduced the need for stenographers, will continue to adversely affect employment prospects for workers in this occupation. The sole exception will be stenographers who are trained as court reporters.

Many types of clerical workers, however, will not be affected by technological innovations because their jobs involve a high degree of personal contact. Substantial growth is anticipated for secretaries, typists, and receptionists, largely as a result of growth in the expanding business services and medical and health care services industries. Counter and fountain workers also are expected to increase as the restaurant industry grows.

Sales workers are employed primarily by retail stores, manufacturing and wholesale firms, insurance companies, and real estate agencies. Employment of this group is expected to grow from 5.5 million to 6.4 million workers, an increase of 17 percent.

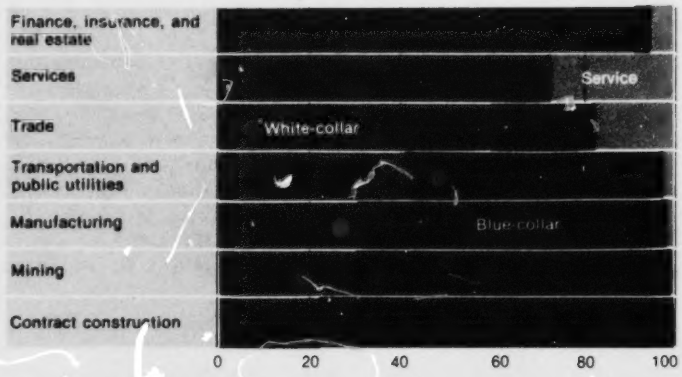
Much of the growth of sales workers will be due to expansion in the retail trade industry, which employs about one-half of these workers. The demand for both full- and part-time sales workers in retail trade is expected to increase as our growing population requires an increasing number of shopping centers and stores. Despite the widespread use of laborsaving merchandising techniques, such as self-service and computerized checkout counters, suburban expansion and longer operating hours will cause employment to increase.

Craft workers include a wide variety of highly skilled workers, such as carpenters, tool-and-die makers, instrument makers, all-round machinists, electricians, and automobile mechanics. Between 1976 and 1985, employment of this group is expected to increase 22 percent, from 11.3 million to 13.7 million workers.

Construction workers and mechanics, the two largest occupations within this group, are expected to account for about two-thirds of the em-

Industries differ in the kinds of workers they employ 8

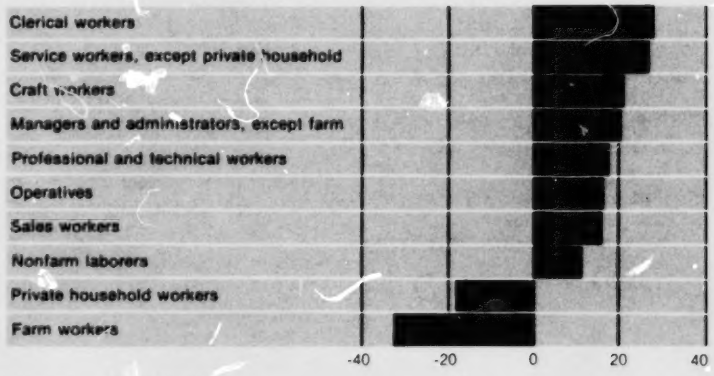
Percent distribution of employment, 1976



Source: Bureau of Labor Statistics

Through the mid-1980's employment growth will vary widely among occupational groups 9

Percent change in employment, 1976-85



Source: Bureau of Labor Statistics

ployment gain for craft workers, and blue-collar worker supervisors and metalcraft workers for most of the remainder.

Nearly all construction trades are expected to grow, but particularly rapid increases are anticipated for heavy equipment operators, plumbers, ironworkers, roofers, and cement masons. Among mechanics and repairers, the most rapid increases will be for workers who repair computers, office machines, air conditioners, and industrial machinery.

In contrast, a continuation of the long-run employment decline in the railroad industry will lead to the decline of some craft occupations concentrated in that industry, such as railroad and car shop repairers. Because of advances in printing technology, very little growth is anticipated in printing crafts.

Operatives are the largest blue-collar group, including workers such as assemblers, packers, truck and bus drivers, and many types of machine operators. Employment of operatives is tied closely to the production of goods, because the majority of these workers are employed in manufacturing industries. The projected slow growth of manufacturing, along with improved production processes, will hold down the demand for these workers. Textile operatives, such as spinners, knitters, and weavers, are expected to decline due to increasing use of machinery in the textile industry.

Outside of manufacturing, employment of most transportation operatives, such as truckdrivers and bus drivers, will increase as the transportation industry grows. An exception will be brake and switch operators; these occupations are expected to decline along with the railroad industry.

Employment of operatives is expected to rise from 13.4 million to 15.6 million workers between 1976 and 1985, an increase of 17 percent.

Laborers, (except farm) include workers such as garbage collectors, construction laborers, freight and stock handlers, and equipment washers. Employment in this group is expected to grow only slowly as machinery increasingly replaces manual labor in construction and manufacturing, the two largest employers of these workers. Power-driven equipment, such as forklift trucks, cranes, and hoists, will handle more and more material in factories, loading docks, and warehouses. Other machines will do excavating, ditch digging, and similar work. Between 1976 and 1985, employment of laborers is expected to increase 11 percent, from 4.3 million to 4.8 million workers.

Service workers include a wide range of workers—fire fighters, janitors, cosmetologists, private household workers, and bartenders are a few examples. These workers, most of whom are employed in the service-producing industries, make up one of the fastest growing occupational groups.

Some of the main factors that are expected to increase the need for these workers are the rising demand for medical care; the greater need for commercial cleaning and protective services; and the more frequent use of restaurants, beauty salons, and lei-

sure services as incomes rise. The employment of private household workers, however, will continue to decline despite a rising demand for their services, because low wages and the strenuous nature of the work make this occupation unattractive to many people.

Employment of service workers is expected to increase 23 percent between 1976 and 1985, from 12.0 million to 14.8 million workers.

Farm workers include farmers and farm operators, as well as farm laborers. Employment of these workers has declined for decades as farm productivity has increased as a result of the trend toward fewer but larger farms, the use of more and better machinery, and the development of new feeds, fertilizers, and pesticides. Between 1976 and 1985, the number of farmworkers is expected to decline 34 percent, from 2.8 million to 1.9 million workers.

Job Openings

The rate of employment growth in an occupation is only one indicator of future job prospects; another indicator is the total number of job openings expected in the occupation. The total includes not only openings resulting from employment growth, but also those resulting from labor force separations (retirements and deaths) and transfers to other occupations.

Between 1976 and 1985, retirements and deaths alone are expected to account for nearly two-thirds of all job openings. (See chart 10.) The need to replace workers who retire or die will be a more significant source of job openings than employment growth in every major occupational group, and in most individual occupations.

Furthermore, a large occupation that is growing slowly may offer more openings than a fast-growing small one. For example, among the major occupational groups, total openings for operatives will exceed total openings for craft workers, despite the fact that employment of craft workers is expected to grow at a faster rate.

Many job openings also are created because of occupational transfers. When a technician is upgraded to an engineer, for example, a job opening for a technician is created. Of course, this shift also adds to the supply of engineers. Data for estimating occupational losses and gains resulting from transfers are not yet available, but work is continuing towards the development of such data.

Education and Employment

A high school diploma by itself is not sufficient preparation for many occupations. But neither is a college degree. Different fields of work require different types of training. Just as there are occupations that require college degrees, so too there are occupations for which technical training, work experience, or training in a particular skill is the most important entry requirement. Employers always wish to hire the best qualified persons available, but this does not mean that they always choose those applicants who have the most education. The type of education and training an individual has had is as important as the amount. For this reason, a vital part of the career planning process is deciding what type as well as how much education and training to pursue.

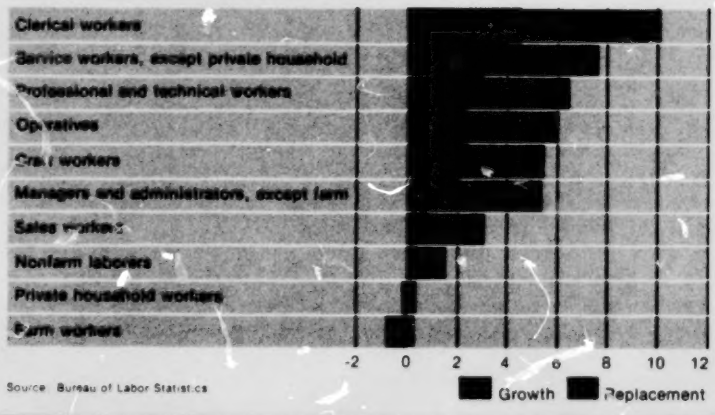
Persons who have definite career goals may not find this decision difficult. Many occupations have specific education requirements. Physicians, for example, must generally complete at least 3 years of college, 4 years of medical school, and in most States 1 year of residency. Cosmetologists are required to complete a State-approved cosmetology course that generally lasts 18 months.

But for most people, the decision is more difficult. Either they have yet to choose a field of work, or the field they have selected may be entered in a variety of ways. Some may know only that they want jobs that provide status and large incomes, for example. Or, an individual may wish to be an auto mechanic but cannot decide whether to leave high school and learn on the job, or graduate and attend a vocational school, or seek an apprenticeship.

Making this type of decision requires specific information about the types of education and training preferred for various occupations, and a knowledge of one's own abilities and aspirations. Information on how to enter each of the occupations included in the *Handbook* is contained in the individual occupational statements, but general information on the relationship of employment prospects to education also is useful.

Persons contemplating dropping out of high school should recognize that a high school education has become standard. The educational attainment of the labor force has risen from 10.9 years of school in 1952 to 12.6 in 1976. Thus, nongraduates are

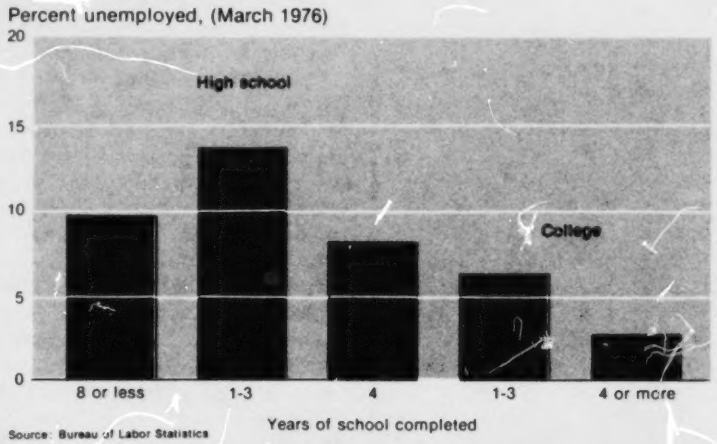
Job openings are determined by replacement plus growth **10**



Source: Bureau of Labor Statistics

The unemployment rate is lowest for persons with a college education

11

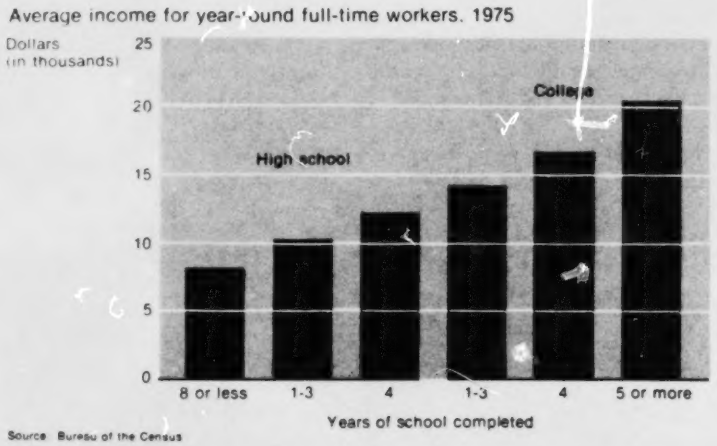


likely to be at a serious disadvantage when seeking jobs that offer better pay or advancement opportunities, unless they have participated in a training program specific to the occupation they wish to enter. As shown in chart 11, the unemployment rate is much higher for persons who did not finish high school than for those who did.

For many individuals, the decision they face is whether to extend their education beyond high school by going to college or by pursuing some other postsecondary education or training program. Looking again at chart 11, for individuals who have graduated from high school, the unemployment rate drops steadily as the amount of education completed increases. In addition, as chart 12 shows, average yearly income rises with the number of years of school completed. In 1975, college graduates, on the average, earned over one-third more than high school graduates, while persons with 5 years or more of college earned one fifth more than those with 4 years of college.

Income increases as the number of years of schooling increases

12



Although college graduates do earn more, on the average, than high school graduates, there are numerous well-paying occupations that do not require a college degree. Workers in the construction crafts and in mechanic and repairer occupations, for example, generally are high school graduates, yet many earn more than workers in some jobs that require a college degree. In fact, earnings in many occupations not requiring college degrees have increased faster than earnings in occupations that do require a degree. Chart 13 shows how much the difference between the earnings of high school graduates and college graduates has narrowed.

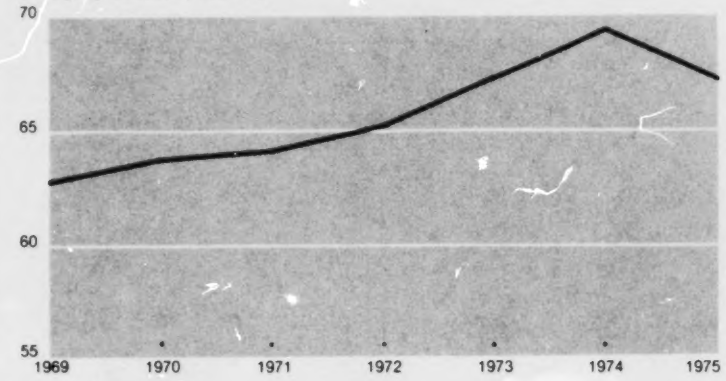
Although data are not available on the earnings of high school graduates who have completed other postsecondary education programs, it is likely that most of those who earn relatively high incomes have obtained some type of additonal education or training.

Traditionally, a college education has been viewed as a gateway to better pay, higher status, and more challenging work. As the opportunity to obtain a college education has become more widespread, more high school graduates have attended college. Accordingly, the proportion of workers in the labor force who have completed at least 4 years of college rose from 7.9 percent to 16.5 percent between 1952 and 1976, and college graduates are expected to constitute 20 percent of the labor force by 1985. Recent experience has shown, however, that the traditional view has not been matched by reality.

Between 1970 and 1976, the proportion of workers having 4 years or more of college increased by more than 60 percent in clerical, sales, service, and blue-collar occupations—areas that have employed very few college graduates in the past. This "spillover" reflects, at least in part, the economic conditions of the 1970-75 period. Cutbacks in the aerospace industry and the recession of 1970-71, followed by an oil embargo in 1972-73 and recession in 1974-75, dampened the economy's growth during the first half of this decade.

Earnings of high school graduates have increased relative to earnings of college graduates 13

Earnings of high school graduates as a percent of earnings of college graduates, 1969-75



Source: Bureau of the Census

Analysis of the future demand for college graduates, and of future supply, indicates that more students are expected to graduate, and more persons currently holding degrees are expected to reenter the labor force, than will be needed to fill jobs that currently demand a college degree.

Prospects are no brighter for many individuals who hold advanced degrees. Colleges and universities, the primary employers of this group, have been faced with declining enrollments and budget cuts in recent years. Their need for teaching and research staff is not expected to grow as rapidly as the number of graduates seeking these positons. Except for persons whose degrees are in areas demanded by business and industry, advanced degree holders may have to take jobs that once went only to graduates who had bachelor's degrees.

Not all occupations requiring college degrees will be overcrowded, however. Nor will there be a lack of demand for graduates of other postsecondary education programs. Many of the occupations that have grown most rapidly or have provided large numbers of job openings have required vocational, apprenticeship, or junior college education. Science and health technicians have been increasingly in demand, as have television and radio service technicians, data processing machine repairers, and air-conditioning mechanics. Technological advances, in particular the computer, have made many office jobs more complicated, thus requiring people who hold these jobs to have a higher level of skill.

Persons wishing to enter these and other occupations have found postsecondary training helpful because employers prefer to hire applicants who have had training in these areas, rather than provide such training themselves. Over the past 10 years, enrollments in public vocational schools, for example, have tripled, while the number of persons registered in apprenticeship programs has jumped 40 percent.

The demand for workers in these and other occupations requiring technical, vocational, or apprenticeship training is expected to continue to rise through the mid-1980's.

The need for workers who have some type of postsecondary training definitely is expanding. But the decision to go to college is an individual matter. Persons who choose occupations that require college degrees should not necessarily be discouraged from pursuing careers that they believe match their interests and abilities. They may wish, however, to acquire more information on the employment outlook for their fields, and to retain the option of switching to related occupations that offer better opportunities. The introductory section of the *Occupational Outlook Handbook for College Graduates* contains a detailed discussion of the job prospects for college graduates.

Individuals who have less clear-cut occupational goals may wish to review their reasons for going to college. College can provide many valuable opportunities for personal growth and self-discovery, as well as the chance to increase one's knowledge of particular subject areas. Attending college for personal reasons alone can be worthwhile, but a student solely interested in career preparation may find alternative types of education and training programs more appropriate—either as an addition to or as a substitute for college attendance.

Whatever one's goals and aspirations, beginning the planning process early allows students time to consider all the choices that are available for preparing for tomorrow's jobs.

ASSUMPTIONS AND METHODS USED IN PREPARING EMPLOYMENT PROJECTIONS

Although the discussions of future job prospects contained in the *Handbook* are written in qualitative terms, the analyses upon which they are based begin with quantitative estimates of projected employment, replacement openings, and—in a few cases—supply.

These projections were developed

using the most recent data available on population, industry and occupational employment, productivity, consumer expenditures, and other factors expected to affect employment. The Bureau's research offices provided much of these data, but many other agencies of the Federal Government were important contributors, including the Bureau of Apprenticeship and Training and the U.S. Employment Service, both in the Employment and Training Administration of the Department of Labor; the Bureau of the Census of the Department of Commerce; the Office of Education and the Rehabilitation Services Administration of the Department of Health, Education, and Welfare, the Veterans Administration; the Civil Service Commission; the Interstate Commerce Commission; the Civil Aeronautics Board; the Federal Communications Commission; the Department of Transportation; and the National Science Foundation.

In addition, experts in industry, unions, professional societies, and trade associations furnished data and supplied information through interviews. Many of these individuals also reviewed preliminary drafts of the statements. The information presented in each statement thus reflects the knowledge and judgment not only of the Bureau of Labor Statistics staff, but also of leaders in the fields discussed, although the Bureau, of course, takes full responsibility.

After the information from these sources was compiled, it was analyzed in conjunction with the Bureau's model of the economy in 1985. Like other models used in economic forecasting, it encompasses the major facets of the economy and represents a comprehensive view of its projected structure. The Bureau's model is comprised of internally consistent projections of gross national product (GNP) and its components—consumer expenditures, business investment, government expenditures, and net exports; industrial output and productivity; labor force; average weekly hours of work; and employment for detailed industry groups and occupations. The methods used to develop the employment projections in this edition of the *Handbook* are the same as those used in other Bureau of Labor Statistics studies of the economy. Detailed descriptions of these methods appear in *The U.S. Economy in 1985*, BLS Bulletin 1809, and the *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910.

Assumptions. The Bureau's projections to 1985 are based on the following general assumptions:

—The institutional framework of the U.S. economy will not change radically.

—Current social, technological, and scientific trends will continue, including values placed on work, education, income, and leisure.

—The economy will gradually recover from the high unemployment levels of the mid-1970's and reach full employment (defined as an unemployment rate of 4 percent) in the mid-1980's.

—No major event such as widespread or long-lasting energy shortages or war will significantly alter the industrial structure of the economy or alter the rate of economic growth.

—Trends in the occupational structure of industries will not be altered radically by changes in relative wages, technological changes, or other factors.

Methods. Beginning with population projections by age and sex developed by the Bureau of the Census, a projection of the total labor force is derived using expected labor force participation rates for each of these groups. In developing the participation rates, the Bureau takes into account a variety of factors that affect a person's decision to enter the labor force, such as school attendance, retirement practices, and family responsibilities.

The labor force projection then is translated into the level of GNP that would be produced by a fully employed labor force. Unemployed persons are subtracted from the labor force estimate and the result is multiplied by a projection of output per worker. The estimates of future output per worker are based on an analysis of trends in productivity (output per work hour) among industries and changes in the average weekly hours of work.

Next, the projection of GNP is divided among its major components: Consumer expenditures, business investment, government expenditures—Federal, State, and local—and net exports. Each of these components is broken down by producing industry. Thus, consumer expenditures, for example, are divided among industries producing goods and services such as housing, food, automobiles, medical care, and education.

Once estimates are developed for these products and services, they are translated into detailed projections of industry output, not only for the industries producing the final product, but also for the intermediate and basic industries that provide the raw materials, electric power, transportation, component parts, and other inputs required in the production process. To facilitate this translation, the Department of Commerce has developed input-output tables that indicate the amount of output from each industry—steel, glass, plastics, etc.—that is required to produce a final product, automobiles for example.

By using estimates of future output per work-hour based on studies of productivity and technological trends for each industry, industry employment projections are derived from the output estimates.

These projections are then compared with employment projections derived using regression analysis. This analysis develops equations that relate employment by industry to combinations of economic variables, such as population and income, that are considered determinants of long-run changes in employment. By comparing projections resulting from input-output analysis and regression analysis, areas may be identified where one method produces a projection inconsistent with past trends or with the Bureau's economic model. The projections are then adjusted accordingly.

Occupational employment projections. Projections of industry employment are translated into occupational employment projections using an industry-occupation matrix. This matrix, which is divided into 200 industry sectors and 400 occupation sectors, describes the current and projected occupational structure of each industry. By applying the projected occupational structure for

each industry to the industry employment projection and aggregating the resulting estimates, employment projections for each of the 400 occupations contained in the matrix are obtained. The growth rate of an occupation, thus, is determined by 1) changes in the proportion of workers in the occupation to the total work force in each industry, and 2) the growth rate of industries in which an occupation is concentrated. An occupation that is projected to increase as a proportion of the work force in each industry, for example, or one that is concentrated in industries projected to grow more rapidly than the average for all industries, would be projected to grow faster than the average for all occupations.

In some cases employment is related directly to one of the components of the Bureau's model--for example, the number of cosmetologists is related to consumer expenditures for beauty shop services. In others, employment is related to an independent variable not explicitly projected in the model, but believed to be a primary determinant of employment in that occupation. The projection of automobile mechanics, for example, is based on the expected stock of motor vehicles. Projections that are developed independently are compared with those in the matrix and revised, if necessary, to assure consistency.

Replacement needs. In addition to a projection of employment for each occupation, a projection is made of the number of workers who will be needed as replacements. Separations constitute a significant source of openings. In most occupations, more workers are needed to replace those who retire, die, or leave the occupation than are needed to fill jobs created by growth. Consequently, even some declining occupations offer employment opportunities.

To estimate replacement openings, the Bureau has developed tables of working life based on actuarial experience for deaths and on decennial census data for general patterns of labor force participation by age and sex. Withdrawals from each occupation are calculated separately for men and women by age group and used to compute an overall separation rate for the occupation. These rates are used to estimate average annual replacement needs for each occupation over the projection period.

The Bureau is currently analyzing data from the 1970 Census to determine the effect of occupational transfers on job openings. These transfers have not been taken into account in calculating replacement needs. Some data on occupational transfers have been published in two *Monthly Labor Review* articles, "Occupational Mobility in the American Labor Force" and "Occupational Mobility of Health Workers," January and May 1977, respectively.

Supply. Supply estimates used in analysis of certain *Handbook* occupations represent the numbers of workers who are likely to seek entry to a particular occupation if past trends of entry to the occupation continue. These estimates are developed independently of the demand estimates. Thus, supply and demand are not discussed in the usual economic sense in which wages play a major role in equating supply and demand. Statistics on college enrollments and graduations by field are the chief sources of information on the potential supply of personnel in professional, technical, and other occupations requiring extensive formal education. Data on persons completing apprenticeship programs provide some information on new entrants into skilled trades. A Bureau publication, *Occupational Supply: Concepts and Sources of Data for Manpower Analysis* (BLS Bulletin 1816, 1974), explores several aspects of occupational supply.

WHERE TO GO FOR MORE INFORMATION

Whether you have questions about a particular job or are trying to compare various fields, the *Occupational Outlook Handbook* is a good place to begin. The *Handbook* will introduce you to some of the important aspects of an occupation and answer many of your initial questions. But the *Handbook* is only one of many sources of information about jobs and careers. After reading a few *Handbook* statements, you may decide that you want more detailed information about a particular occupation. Or you may want to find out where you can find this kind of work in your community or where you can go for appropriate training. If you are willing to make an effort, you will discover a wealth of occupational information—much of it available at little or no cost.

Sources of Career Information

Much information on careers is put out by government, industry, trade unions, schools, professional associations, private guidance services, and other organizations. You should be careful in assessing any single piece of career guidance material. Keep in mind the date and source, in particular. Material that is too old may contain obsolete or even misleading information. Be especially cautious about accepting information on employment outlook, earnings, and training requirements if it is more than 5 years old. You also need to consider the source—and thus the intent--of the career guidance material you obtain.

Although some occupational materials are produced solely for the purpose of objective vocational guidance, others are produced for recruitment purposes. You should be wary of biased information, which may tend to leave out important

items, overglamorize the occupation, overstate the earnings, or exaggerate the demand for workers.

School counselors can be a very important source of guidance information. Counselors should be able to refer you to the different types of career materials available in your school or community. They are likely to be familiar with the job market. They also can discuss entry requirements and costs of the schools, colleges, or training programs that offer preparation for the kind of work in which you are interested. Most important of all, your counselor can help you consider the occupational information you obtain in relation to your own abilities, personal aspirations, and career goals.

Guidance offices usually have collections of career information. In fact, the copy of the *Handbook* that you're reading now may have come from the guidance office. Find out what else the office has to offer.

Some schools have **career centers**; often, these are located in or near the library or media center. Career centers provide a sampling of printed and audiovisual career information materials, and also may offer individual counseling, group discussions, guest speakers, and field trips.

Libraries have books, brochures, magazines, and audiovisual materials that contain information about jobs and careers. Check your school library or media center, of course—but don't forget the public library. Many libraries have pamphlet files devoted to specific occupations. Some libraries also have collections of filmstrips, records and tapes, and microfilms with occupational information. The reference shelf undoubtedly contains one directory or more that you will find useful if you want to get the names of specific schools, colleges, or business concerns. The library staff can direct you to the information best suited to your needs.

Trade unions, business firms, trade associations, professional societies, and educational institutions all publish career information, and much of this is available for the asking.

The Sources of Additional Information section at the end of most *Handbook* statements lists organizations you can write to. This is a good way to begin. For the names and addresses of other organizations, consult the directories on your library's reference shelf. There, you are likely to find directories that list:

—trade associations.

—professional associations.

—business firms.

—junior and community colleges.

—colleges and universities.

—home study and correspondence programs.

—business, trade, and technical schools.

—sources of scholarships and financial aid.

Your school library or career center may have one directory or more put out by commercial publishers that list sources of career information by occupation.

Another useful directory is the U.S. Office of Education's *Directory of Postsecondary Schools with Occupational Programs, 1973-74*, which lists schools offering specific occupational training programs. The directory lists private business, trade, and technical schools as well as community and junior colleges and 4-year colleges and universities.

Computer-assisted occupational information systems have been installed in some schools and career centers. These systems allow users to obtain career information stored in a computer by entering specific requests and receiving immediate answers. Through the occupational information systems, users are able to examine the ways in which different personal abilities, interests, and preferences are related to different occupations. The U.S. Department of Labor is currently providing funds for such systems in eight States.

Don't overlook the importance of **personal contacts**. An interview with someone in a particular job can often tell you much more than a booklet or brochure can. By asking the right questions, you find out what kind of training is really important, how workers got their first jobs as well as the one they're in now, and what they like and dislike about the work.

State employment security agencies in many States publish career briefs for dozens of different occupations and industries. These briefs usually describe earnings and job outlook information for a particular State—and sometimes for a city or metropolitan area. By contrast, the *Handbook* gives information for the Nation as a whole. In addition, a number of States publish brochures on writing resumes, finding job openings, preparing for interviews, and other aspects of a job search. To find out what materials are available for your State, consult the U.S. Employment and Training Administration's 1976 *Guide to Local Occupational Information*. Or write directly to the chief information officer in your State employment security agency. Following is a list of their titles and addresses:

Alabama

Public Information Officer, Department of Industrial Relations, Industrial Relations Bldg., 649 Monroe St., Montgomery, Ala. 36130.

Alaska

Information Officer, Employment Security Division, Department of Labor, P.O. Box 3-7000, Juneau, Alaska 99811.

Arizona

Chief of Information and Education, Arizona State Employment Security Commission, P.O. Box 6123, Phoenix, Ariz. 85005.

Arkansas

Public Information Officer, Employment Security Division, P.O. Box 2981, Little Rock, Ark. 72203.

California

Public Information Section, Employment Development Department, 800 Capitol Mall, Sacramento, Calif. 95814.

Colorado

Public Information Officer, Division of Employment, Department of Labor and Employment, 251 East 12th Ave., Denver, Colo. 80203.

Connecticut

Public Information Supervisor, Connecticut Employment Security Division, 200 Folly Brook Blvd., Weatherfield, Conn. 06109.

Delaware

Secretary, Department of Labor, 801 West 14th St., Wilmington, Del. 19899.

District of Columbia

Chief, Community Relations and Information Office, D.C. Department of Manpower, Room 601, 500 C St. NW., Washington, D.C. 20212.

Florida

Information Director, Florida Department of Commerce, Collins Bldg., Tallahassee, Fla. 32304.

Georgia

Chief of Public Relations and Information, Georgia Department of Labor, 254 Washington St. SW., Atlanta, Ga. 30334.

Hawaii

Information Specialist, Department of Labor and Industrial Relations, 825 Mililani St., Honolulu, Hawaii 96813.

Idaho

Public Information Coordinator, Department of Employment, P.O. Box 35, Boise, Idaho 83707.

Illinois

Director, Communications and Public Information, Illinois Department of Labor, State Office Bldg., Room 705, Springfield, Ill. 62706.

Indiana

Director of Information and Education, Employment Security Division, 10 North Senate Ave., Indianapolis, Ind. 46204.

Iowa

Chief of Information Services, Employment Security Commission, 1000 East Grand Ave., Des Moines, Iowa 50319.

Kansas

Public Relations Director, Department of Human Resources, 401 Topeka Ave., Topeka, Kans. 66603.

Kentucky

Supervisor, Public Information, Department of Human Resources, 592 East Main St., Frankfort, Ky. 40601.

Louisiana

Public Relations Director, Department of Employment Security, P.O. Box 44094, Baton Rouge, La. 70804.

Maine

Chairman, Employment Security Commission, 20 Union St., Augusta, Maine 04330.

Maryland

Director of Public Relations, Department of Employment and Social Services, Room 601, 1100 North Eutaw St., Baltimore, Md. 21201.

Massachusetts

Supervisor of Information, Division of Employment Security, Hurley Bldg., Government Center, Boston, Mass. 02114.

Michigan

Director, Information Services Division, Employment Security Commission, Department of Labor Bldg., 7310 Woodward Ave., Detroit, Mich. 48202.

Minnesota

Director of Public Information, Department of Employment Services, 390 North Robert St., St. Paul, Minn. 55101.

Mississippi

Public Relations Representative, Employment Security Commission, P.O. Box 1699, Jackson, Miss. 39205.

Missouri

Information Supervisor, Division of Employment Security, Department of Labor and Industrial Relations, P.O. Box 59, Jefferson City, Mo. 65101.

Montana

Information Officer, Employment Security Division, P.O. Box 1728, Helena, Mont. 59601.

Nebraska

Information Officer, Division of Employment, Department of Labor, P.O. Box 94600, State House Station, Lincoln, Nebr. 68509.

Nevada

Public Information Officer, Employment Security Department, 500 East Third St., Carson City, Nev. 89701.

New Hampshire

Commissioner, Department of Employment Security, 32 South Maine St., Concord, N.H. 03301.

New Jersey

Director of Public Information, Division of Employment Security, Department of Labor and Industry, John Fitch Plaza, Trenton, N.J. 08625.

New Mexico

Information Officer, Employment Security Commission, P.O. Box 1928, Albuquerque, N. Mex. 87103.

New York

Director, Division of Research and Statistics, Department of Labor, 2 World Trade Center, New York, N.Y. 10047.

North Carolina

Communications and Information Specialist, Employment Security Commission, P.O. Box 25903, Raleigh, N.C. 27602.

North Dakota

Public Information Section, Employment Security Bureau, 145 South Front St., Bismarck, N. Dak. 58501.

Ohio

Public Information Officer, Bureau of Employment Services, 145 South Front St., Columbus, Ohio 43216.

Oklahoma

Information Director, Employment Security Commission, Will Rogers Memorial Office Bldg., Oklahoma City, Okla. 73105.

Oregon

Information Officer, Employment Division, 875 Union St. NE., Salem, Oreg. 97310.

Pennsylvania

Director of Public Relations, Bureau of Employment Security, Department of Labor and Industry Bldg., 7th and Forster Sts., Harrisburg, Pa. 17121.

Puerto Rico

Information Officer, Bureau of Employment Security, 414 Barbosa Ave., Hato Rey, P.R. 00917.

Rhode Island

Information Officer, Department of Employment Security, 24 Mason St., Providence, R.I. 02903.

South Carolina

Public Information Director, Employment Security Commission, P.O. Box 995, Columbia, S.C. 29202.

South Dakota

Public Information Director, Department of Labor, Office Bldg. No. 2, Pierre, S. Dak. 57501.

Tennessee

Chief of Public Relations, Department of Employment Security, 519 Cordell Hull Bldg., Nashville, Tenn. 37219.

Texas

Public Information Officer, Texas Employment Commission, TEC Bldg., 15th and Congress Ave., Austin, Tex. 78778.

Utah

Public Relations Director, Department of Employment Security, P.O. Box 11249, Salt Lake City, Utah 84111.

Vermont

Public Information Officer, Department of Employment Security, P.O. Box 488, Montpelier, Vt. 05602.

Virginia

Director, Information Services, Virginia Employment Commission, P.O. Box 1358, Richmond, Va. 23211.

Washington

Information Officer, Employment Security Department, P.O. Box 367, Olympia, Wash. 98504.

West Virginia

Information Representative, Department of Employment Security, 4407 McCorkle Ave. SE., Charleston, W. Va. 25305.

Wisconsin

Director of Information, Department of Industry, Labor, and Human Relations, P.O. Box 2209, Madison, Wis. 53701.

Wyoming

Information Officer, Employment Security Commission, P.O. Box 2760, Casper, Wyo. 82601.

Career Information for Special Groups

Certain groups of jobseekers face special difficulties in obtaining suitable and satisfying employment. All too often, veterans, youth, handicapped persons, members of ethnic and racial minorities, older workers, and women experience difficulty in the labor market. Choosing a career wisely and realistically is important for everyone, but it is doubly important for members of these groups. Special counseling, training, and placement are available in many communities—through the public employment service, community service agencies, or other organizations.

In addition, literature on career guidance and vocational training for special labor force groups is available from the Federal Government. Most of these publications can be obtained free of charge. Following are selected examples:

Youth

Employment and Training for Youth. (program fact sheet), February 1977.

Office of Information, Inquiries Section, Room 10225, Employment and Training Administration, U.S. Department of Labor, 601 D St. NW., Washington, D.C. 20213.

A Message to Young Workers About the Fair Labor Standards Act, As Amended in 1974. **(WH Publication 1236), 1976.**

Office of Information, Room 4331, Employment Standards Administration, U.S. Department of Labor, 200 Constitution Ave. NW., Washington, D.C. 20210.

Mentally handicapped

These, Too, Must Be Equal: America's Needs in Habilitation and Employment of the Mentally Retarded, 1974.

President's Committee on Mental Retardation, Regional Office Building, 7th and D Sts. SW., Washington, D.C. 20201.

Guide to Job Placement of Mentally Retarded Workers.

Preparing for Work, 1975.

How to Get a Job.

Jobs and Mentally Retarded People, 1974.

President's Committee on Employment of the Handicapped, Room 600, Vanguard Building, 1111 20th St. NW., Washington, D.C. 20036.

Affirmative Action to Employ Handicapped People.

Office of Information, Room 4331, Employment Standards Administration, U.S. Department of Labor, 200 Constitution Ave. NW., Washington, D.C. 20210

Physically handicapped

Careers for the Homebound.

People at Work: 50 Profiles of Men and Women With MS, 1975.

President's Committee on Employment of the Handicapped, Room 600, Vanguard Building, 1111 20th St. NW., Washington, D.C. 20036.

Affirmative Action to Employ Handicapped People.

Office of Information, Room 4331, Employment Standards Administration, U.S. Department of Labor, 200 Constitution Ave. NW., Washington, D.C. 20210.

Older workers

The Law Against Age Discrimination in Employment. (WH Publication 1303).

Office of Information, Room 4331, Employment Standards Administration, U.S. Department of Labor, 200 Constitution Ave. NW., Washington, D.C. 20210.

Services for Older Workers. (program fact sheet), April 1977.

Memo to Mature Jobseekers, 1977.

Office of Information, Inquiries Section, Room 10225, Employment and Training Administration, U.S. Department of Labor, 601 D St. NW., Washington, D.C. 20213.

Employment and Volunteer Opportunities for Older People. (AoA Fact Sheet), Revised 1976.

National Clearinghouse on Aging, Room 4146, U.S. Department of Health, Education, and Welfare, 330 Independence Ave. SW., Washington, D.C. 20201.

Women

Steps to Opening the Skilled Trades to Women, June 1974.

Why Not be an Apprentice and Become a Skilled Craft Worker. (leaflet 52), 1974.

Publications of the Women's Bureau, January 1977.

Selected Sources of Career Information, 1974.

Women's Bureau, Employment Standards Administration, U.S. Department of Labor, 200 Constitution Ave. NW., Washington, D.C. 20210.

Veterans

Out of the Service and Looking for a Job? Here's Help!, 1976.

Veterans for Hire: Good Business, 1976.

Office of Information, Inquiries Section, Room 10225, Employment and Training Administration, U.S. Department of Labor, 601 D St. NW., Washington, D.C. 20213.

Veterans Readjustment Appointments—Questions and Answers.(BRE-36), revised 1977.

Bureau of Recruiting and Examining, Room 6552, Civil Service Commission, 1900 E St. NW., Washington, D.C. 20415.

The following publications are available from VA regional offices (listed in the telephone directory under "United States Government—Veterans Administration") or from:

Department of Veterans Benefits - 232A, Veterans Administration Central Office, 810 Vermont Ave. NW., Washington, D.C. 20420.

Apprenticeship or Other On-Job Training Benefits for Veterans With Service Since January 31, 1975. (VA pamphlet 20-69-4), March 1975.

A Summary of Employment Benefits and Opportunities for Vietnam Era Veterans. (VA pamphlet 20-69-6), December 1974.

Information on Finding a Job

Do you need help in finding a job? For information on job openings, follow up as many leads as possible. Parents, neighbors, teachers, and counselors may know of jobs. Check the want ads. Investigate the local office of your State employment service. And find out whether private or nonprofit employment agencies in your community can help you. The following section will give you some idea of where you can go to look for a job and what sort of help to expect.

Informal job search methods. Informal methods of job search are the most popular, and also the most effective. Informal methods include di-

rect application to employers with or without referral by friends or relatives. Jobseekers locate a firm that might employ them and file an application, often without certain knowledge that an opening exists.

You can find targets for your informal search in several ways. The Yellow Pages and local chambers of commerce will give you the names and addresses of appropriate firms in the community where you wish to work. You can also get listings of most firms in a specific industry—banking, insurance, manufacturing, and newspaper publishing, for example—by consulting one of the directories on the reference shelf of your public library. Friends and relatives may suggest places to apply for a job, and people you meet in the course of your job search are also likely to give you ideas.

Want ads. The "Help Wanted" ads in a major newspaper contain hundreds of job listings. As a job search tool, they have two advantages: They are cheap and easy to acquire, and they often result in successful placement. There are disadvantages as well. Want ads give a distorted view of the local labor market, for they tend to underrepresent small firms. They also tend to overrepresent certain occupations, such as clerical and sales jobs. How helpful they are to you will depend largely on the kind of job you seek.

Bear in mind that want ads do not provide complete information; many ads give little or no description of the job, working conditions, and pay. Some ads omit the identity of the employer. In addition, firms often run multiple listings. Some ads offer jobs in other cities (which do not help the local worker); others advertise employment agencies rather than employment.

If you use the want ads, keep the following suggestions in mind:

* Don't rely *exclusively* on the want ads; follow up other leads, too.
* Answer ads promptly. The opening may be filled before the ad stops running.
* Follow the ads diligently Checking them every day as early as possible gives you the best advantage over other applicants, which may mean the difference between a job and a rejection.
* Don't expect too much from "blind ads" that do not reveal the employer's identity. Employers use blind ads to avoid being swamped with applicants, or to fill a particular vacancy quietly and confidentially. The chances of finding a job through blind ads tend to be slim.
* Be cautious about answering "no experience necessary" ads. Most employers are able to fill job openings that do not require experience without advertising in the newspaper. This type of ad may mean that the job is hard to fill because of low wages or poor working conditions, or because it is straight commission work.

Public employment service. The public employment service, also called the Job Service, can be a good source of information about job openings in your community. Employment security (ES) agencies in each of the 50 States and the District of Columbia are affiliated with the U.S. Employment Service, and provide their services without charge. Operating through a network of 2,500 local offices, State agencies help jobseekers find employment and help employers find qualified workers. To find the office nearest you, look in the State government telephone listings under "Job Service" or "Employment." If the local office does not provide the information or services you are looking for, write to the information officer in your State capital. Addresses are given in the first section of this chapter.

General services. Assuming you come to your local employment service office because you're looking for a job, the first step is to fill out an application that asks for general background and work history. To speed up the process, you should bring along complete information on previous jobs, including dates of employment, names and addresses of employers, and pay levels.

After completing the application, you will talk briefly with an interviewer in order to be classified into a particular job cluster—professional and management, sales, clerical, and so forth. This process, although crucial, takes very little time. If you have specific training and experience and know exactly what you want, the initial interview may suffice. Most applicants, however, can benefit from additional guidance services, which are available on request. The unskilled and inexperienced may take a general aptitude test battery that measures their abilities, and a vocational interest questionaire that measures their occupational interests. Specific tests in typing and shorthand may also be given.

You may also talk at length with occupational counselors. These counselors, or interviewers, can assist in a wide range of areas. They can help you pinpoint a suitable field of interest, suggest training programs and other means of preparing for a particular occupation, or simply advise you on compiling a resume.

One other aspect of your local office's services deserves particular attention—the occupational registers. Employment service offices often maintain files of resumes of qualified workers in professional, clerical, and craft occupations, for use by employers seeking such workers. Ask to have your resume filed in the appropriate register.

Job Information Service. The Job Information Service (JIS) plays an important role in matching workers and jobs. JIS provides a self-service listing of job openings, as well as a library of occupational and job search literature. Employment service offices in most large cities have a Job Bank as well--a computerized file of job openings, revised and printed out daily. Because it is self-service, the JIS unit is meant for applicants who know what kind of work they are qualified to do. Those applicants can look over Job Bank listings and select the openings they want to apply for. This gives them quick access to job information and frees employment service staff to spend more time with clients who need personal assistance.

The JIS may include the Job Bank Openings Summary (JBOS) and the Job Bank Frequently Listed Openings Report (JOB-FLO). JBOS is a monthly report that provides information on job opportunities listed

during the previous month in Job Banks across the Nation. JOB-FLO provides similar information, but focuses on the "high volume" occupations—those with the greatest number of openings. JBOS and JOB-FLO may not help you find a particular opening, but they can describe employment trends in a particular city or pinpoint the cities that have the greatest numbers of openings in a particular occupation.

The JIS also includes a monthly publication, entitled "Occupations in Demand," that reports the number and locations of openings in high-demand occupations during the previous month. It is designed to be easily read by the average jobseeker and can be found in libraries and counseling offices as well as at the employment service.

Special services. Serving people with job market disadvantages is an important function of the employment service, and many local offices have specially trained counselors who advise veterans, youth, handicapped, or older workers.

By law, veterans are entitled to priority in interviewing, counseling, testing, job development, and job placement. Special counselors called veterans reemployment representatives are trained to deal with the particular problems of veterans, many of whom find it difficult to readjust to civilian life. While such veterans often face multiple problems, joblessness alone is a major barrier to resuming an ordinary life. Special help for disabled veterans begins with outreach units in each State, whose job it is to identify jobless disabled veterans and make them aware of the many kinds of assistance available to them.

As part of the effort to reduce excessive youth unemployment, local employment service offices test and counsel young people, and refer them to training programs or jobs whenever possible. These offices also manage summer youth programs. Youthful jobseekers from very poor families receive information on the various kinds of federally funded job programs for young people, including part-time and work-experience projects and the Job Corps.

For people with mental or physical disabilities, the employment service provides assistance in making realistic job choices, and in overcoming problems related to getting and holding jobs. Job openings for handicapped workers are listed as well. Often, these openings are with government contractors and other firms that are making a positive effort to employ handicapped workers.

Older worker specialists in many local employment service offices assist middle-aged and older workers, whose job search generally differs from that of younger workers. Both counseling and placement services are tailored to the unique needs of older workers. Jobseekers over 55 who have very low incomes may be referred to one of the thousands of part-time, community service jobs for the elderly funded by the Federal Government.

Private employment agencies. In the appropriate section of the classified ads or the telephone book you can find numerous advertisements for private employment agencies. All are in business to make money, but some offer higher quality service and better chances of successful placement than others.

The three main places in which private agencies advertise are newspaper want ads, the Yellow Pages, and trade journals. Telephone listings give little more than the name, address, phone number, and specialty of the agency, while trade journals only list openings for a particular occupation, such as accountant or computer programmmer. Want ads, then, are the best source of general listings of agencies.

These listings fall into two categories—those offering specific openings and those offering general promise of employment. You should concentrate on the former, using the latter only as a last resort. With a specific opening mentioned in the ad, you have greater assurance of the agency's desire to place qualified individuals in suitable jobs.

When responding to such an ad, you may learn more about the job over the phone. If you are interested, visit the agency, fill out an application, present a resume, and talk with an interviewer. The agency will then arrange an interview with the employer if you are qualified, and perhaps suggest alternative openings if you are not.

Most agencies operate on a commission basis, with the fee contingent upon a successful match. Agencies advertising "no fee, no contracts" are paid by the employer and charge the applicant nothing. Many other agencies, however, do charge their applicants. You should find out before using them exactly what the services will cost you.

Community agencies. A growing number of nonprofit organizations throughout the Nation provide counseling, career development, and job placement services. These agencies generally concentrate on services for a particular labor force group—women, the elderly, youth, minorities, or ex-offenders, for example.

Community employment agencies serve an important function in providing the extensive counseling that many disadvantaged jobseekers require. They often help their clients resolve personal, family, or other fundamental problems that may stand in the way of finding a suitable job. Some agencies provide necessary job training, while others refer their clients to training programs elsewhere. For the most part, these community agencies take a strong active interest in their clients, and provide an array of services designed to help people find and keep jobs.

It's up to you to discover whether there are such agencies in your community—and whether they can help you. The State employment service should be able to tell you whether such an agency has been established in your community. If the local office cannot help, write the State information officer. Your church, synagogue, or local library may have the information, too. The U.S. Department of Labor is another possible source of information, for many of these agencies receive some or all of their funding from the Federal Government, through the Comprehensive Employment and Training Act (CETA). Among its many and varied provisions, CETA authorizes Federal money for local organizations that

offer job counseling, training, and placement help to unemployed and disadvantaged persons. For further information, write:

Office of Comprehensive Employment Development, Employment and Training Administration, U.S. Department of Labor, Room 6000, 601 D St. NW., Washington, D.C., 20213; or the Office of Information, Room 10406, at the same address.

Another likely source of information is the U.S. Department of Labor's *Directory for Reaching Minority Groups*. Although the 1973 directory is out of print, a revised edition is being prepared, and will list organizations that provide job information, training, and other services to minorities. For information, write to:

Bureau of Apprenticeship and Training, U.S. Department of Labor, 601 D St. NW., Washington, D.C. 20213.

A directory that lists employment counseling and advocacy organizations for women is available for a nominal charge from:

Wider Opportunities for Women (WOW), 1649 K St. NW., Washington, D.C., 20006.

College career planning and placement offices. For those who have access to them, career planning and placement offices at colleges and universities offer the jobseeker many valuable services. Like the community agencies that serve disadvantaged jobseekers by offering supportive services, college placement offices function as more than just employment agencies. In addition to counseling, they teach students to acquire jobseeking skills. They emphasize writing resumes and letters of application, making a list of possible employers, preparing for interviews, and other aspects of job searching. College placement offices offer other services, too. At larger campuses they bring students and employers together by providing schedules and facilities for interviews with industry recruiters. Many offices also maintain lists of local part-time and temporary jobs, and some have files of summer openings.

Labor Market Information

All State employment security agencies develop detailed labor market data needed by employment and training specialists and educators who plan for local needs. Such information helps policymakers decide whether or not to expand a vocational training program, for example—or drop it altogether. Jobseekers and counselors also may find these studies helpful. Typically, State agencies publish reports that deal with future occupational supply, characteristics of the work force, changes in State and area economic activities, and the employment structure of important industries. For all States, and for nearly all Standard Metropolitan Statistical Areas (SMSA's) of 50,000 inhabitants or more, data are available that show current employment as well as estimated future needs. This information is very detailed; generally, each State issues a report covering current and future employment for as many as 200 industries and 400 occupations. In addition, major statistical indicators of labor market activity are released by all of the States on a monthly, quarterly, and annual basis. For information on the various labor market studies, reports, and analyses available in a specific State, contact the chief of research and analysis in the State employment security agency. Titles and addresses are as follows:

Alabama

Chief, Research and Statistics, Department of Industrial Relations, Industrial Relations Bldg., 649 Monroe St., Montgomery, Ala. 36130.

Alaska

Chief, Research and Analysis, Employment Security Division, Department of Labor, P.O. Box 3-7000, Juneau, Alaska 99811.

Arizona

Manager, Labor Market Information, Research and Analysis, Department of Economic Security, P.O. Box 6123, Phoenix, Ariz. 85005.

Arkansas

Chief, Research and Statistics, Employment Security Division, P.O. Box 2981, Little Rock, Ark. 72203.

California

Chief, Employment Data and Research Division, Employment Development Department, 800 Capitol Mall, Sacramento, Calif. 95814.

Colorado

Chief, Research and Analysis, Division of Employment, Department of Labor and Employment, 251 East 12th Ave., Denver, Colo. 80203.

Connecticut

Director, Research and Information, Connecticut Employment Security Division, 200 Folly Brook Blvd., Weatherfield, Conn. 06109.

Delaware

Chief, Office of Research, Planning, and Evaluation, Department of Labor, 801 West 14th St., Wilmington, Del. 19899.

District of Columbia

Chief, Division of Manpower Reports and Analysis, Office of Administration and Management Services, D.C. Department of Manpower, 605 G St. NW., Washington, D.C. 20001.

Florida

Director, Research and Statistics, Division of Employment Security, Florida Department of Commerce, 1720 South Gadsden St., Tallahassee, Fla. 32304.

Georgia

Director, Information Systems, Employment Security Agency, Department of Labor, 254 Washington St. SW., Atlanta, Ga. 30334.

Hawaii

Chief, Research and Statistics, Department of Labor and Industrial Relations, 825 Mililani St., Honolulu, Hawaii 96813.

Idaho

Chief, Research and Analysis, Department of Employment, P.O. Box 35, Boise, Idaho 83707.

Illinois

Manager, Research and Analysis Division, Bureau of Employment Security, Department of Labor, 910 South Michigan Ave., Chicago, Ill. 60605.

Indiana

Chief of Research, Employment Security Division, 10 North Senate Ave., Indianapolis, Ind. 46204.

Iowa

Chief, Research and Statistics, Employment Security Commission, 1000 East Grand Ave., Des Monies, Iowa 50319.

Kansas

Chief, Research and Analysis Department, Employment Security Division, Department of Labor, 401 Topeka Ave., Topeka, Kans. 66603.

Kentucky

Director, Research and Special Projects, Department of Human Resources, State Office Building Annex, Frankfort, Ky. 40601.

Louisiana

Acting Chief, Research and Statistics, Department of Employment Security, P.O. Box 44094, Baton Rouge, La. 70804.

Maine

Director, Manpower Research Division, Employment Security Commission, 20 Union St., Augusta, Maine 04330.

Maryland

Acting Director, Research and Analysis, Department of Human Resources, 1100 North Eutaw St., Baltimore, Md. 21201.

Massachusetts

Assistant Director, Research and Information Service, Division of Employment Security, Hurley Bldg., Government Center, Boston, Mass. 02114.

Michigan

Director, Research and Statistics Division, Employment Security Commission, Department of Labor Bldg., 7310 Woodward Ave., Detroit, Mich. 48202.

Minnesota

Director, Research and Planning, Department of Employment Services, 390 North Robert St., St. Paul, Minn. 55101.

Mississippi

Chief, Research and Statistics, Employment Security Commission, P.O. Box 1699, Jackson, Miss. 39205.

Missouri

Chief, Research and Analysis, Division of Employment Security, Department of Labor and Industrial Relations, P.O. Box 59, Jefferson City, Mo. 65101.

Montana

Chief, Research and Analysis, Employment Security Division, P.O. Box 1728, Helena, Mont. 59601.

Nebraska

Chief, Research and Statistics, Division of Employment, Department of Labor, P.O. Box 94600, State House Station, Lincoln, Nebr. 68509.

Nevada

Chief, Manpower Information and Research, Employment Security Department, 500 East Third St., Carson City, Nev. 89701.

New Hampshire

Supervisor, Economic Analysis and Reports, Department of Employment Security, 32 South Main St., Concord, N.H. 03301.

New Jersey

Director, Division of Planning and Research, Department of Labor and Industry, John Fitch Plaza, Trenton, N.J. 08625.

New Mexico

Chief, Research and Statistics, Employment Security Commission, P.O. Box 1928, Albuquerque, N. Mex. 87103.

New York

Director, Division of Research and Statistics, Department of Labor, 2 World Trade Center, New York, N.Y. 10047.

North Carolina

Manager, Bureau of Employment Security Research, Employment Security Commission, P.O. Box 25903, Raleigh, N.C. 27602.

North Dakota

Chief, Reports and Analysis, Employment Security Bureau, P.O. Box 1537, Bismarck, N. Dak. 58501.

Ohio

Director, Division of Research and Statistics, Bureau of Employment Services, 145 South Front St., Columbus, Ohio 43216.

Oklahoma

Chief, Research and Planning Division, Employment Security Commission, Will Rogers Memorial Office Bldg., Oklahoma City, Okla. 73105.

Oregon

Chief, Research and Statistics, Employment Division, 875 Union St. NE., Salem, Oreg. 97310.

Pennsylvania

Assistant Director, Research and Statistics, Bureau of Employment Security, Department of Labor and Industry, 7th and Forster Sts., Harrisburg, Pa. 17121.

Puerto Rico

Chief of Research and Statistics, Bureau of Employment Security, 427 Barbosa Ave., Hato Rey, P.R. 00917.

Rhode Island

Supervisor, Employment Security Research, Department of Employment Security, 24 Mason St., Providence, R.I. 02903.

South Carolina

Director, Manpower Research and Analysis, Employment Security Commission, 1550 Gadsden St., Columbia, S.C. 29202.

South Dakota

Chief, Research and Statistics, Employment Security Department, 607 North Fourth St., Box 730, Aberdeen, S. Dak. 57401.

Tennessee

Chief, Research and Statistics, Department of Employment Security, 519 Cordell Hull Bldg., Nashville, Tenn. 37219.

Texas

Chief, Manpower Data Analysis and Research, Texas Employment Commission, TEC Bldg., 15th and Congress Ave., Austin, Tex. 78778.

Utah

Director, Reports and Analysis, Department of Employment Security, P.O. Box 11249, Salt Lake City, Utah 84111.

Vermont

Chief, Research and Statistics, Department of Employment Security, P.O. Box 488, Montpelier, Vt. 05602.

Virginia

Chief, Manpower Research, Virginia Employment Commission, P.O. Box 1358, Richmond, Va. 23211.

Washington

Chief, Research and Statistics, Employment Security Department, P.O. Box 367, Olympia, Wash. 98504.

West Virginia

Chief, Research and Statistics, Department of Employment Security, 112 California Ave., Charleston, W. Va. 25305.

Wisconsin

Director, Research and Statistics, Department of Industry, Labor and Human Relations, P.O. Box 2209, Madison, Wis. 53701.

Wyoming

Chief, Research and Analysis, Employment Security Commission, P.O. Box 2760, Casper, Wyo. 82601.

What's an ad for the OOQ doing in a place like this?

The career information contained in the reprint you are reading was taken from the 1978-79 edition of the Occupational Outlook Handbook. But the Handbook is not the only source of useful career information published by the Bureau of Labor Statistics. The Handbook's companion, the Occupational Outlook Quarterly, is published four times during the school year to keep subscribers up to date on new occupational studies completed between editions of the Handbook. The Quarterly also gives practical information on training and educational opportunities, salary trends, and new and emerging jobs—just what people need to know to plan careers.

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